

WELL SEARCH WITHIN A ONE-MILE RADIUS OF THE L.E. CARPENTER SITE, WHARTON, NEW JERSEY

27 MARCH 1991

SUMMARY

It is unlikely that any of the 34 actual or potential groundwater users within approximately a one-mile radius of LEC are being impacted by any groundwater contamination from the site. This conclusion is based on a review of NJDEP well permits, an investigation of their current status, and an analysis of bedrock and surface topography to estimate the hydraulic position (i.e. upgradient or downgradient) of the well permit with respect to LEC. Figure 1 shows the locations of these well permits. Figure 2 shows WESTON's estimate of those areas upgradient and downgradient of LEC and the location of the well permits. Table 1 summarizes the information for each well permit according to its position, upgradient or downgradient, with respect to LEC and current status according to public tax office, water department, health department, and phone listing information. Table 2 summarizes the same well permit information simply by current status.

BREAKDOWN OF WELL PERMITS BY USE AND LOCATION

Based on these analyses, the following conclusions were reached regarding the well permits:

- Up to seven wells are or may be in use within approximately a one-mile radius of LEC (Wells 9, 10, 11, 15, 16, 17 and 18 as shown on Figures 1 and 2 and listed on Tables 1 and 2).
 - Five are public supply wells, two of which are out-of-service. The remaining two are domestic wells.
 - Three of the public supply wells (Wells 9, 10, and 11) are probably downgradient of the site. NIDEP required monitoring of the three public supply wells shows acceptable water quality as of February 1990 (date of last test). (See Attachment 1)
 - The remaining two public supply wells, Wells 15 and 16, are out of service, and the two domestic wells, Wells 17 and 18, are probably upgradient of the site.
- Thirteen of the addresses listed on well permits as well locations are presently served by public water supplies as indicated by water department billing records. WESTON assumes the residents use the public supply for potable water (Wells 2, 3, 4, 5, 6, 7, 8, 13, 20, 23, 26, 27, and 31).



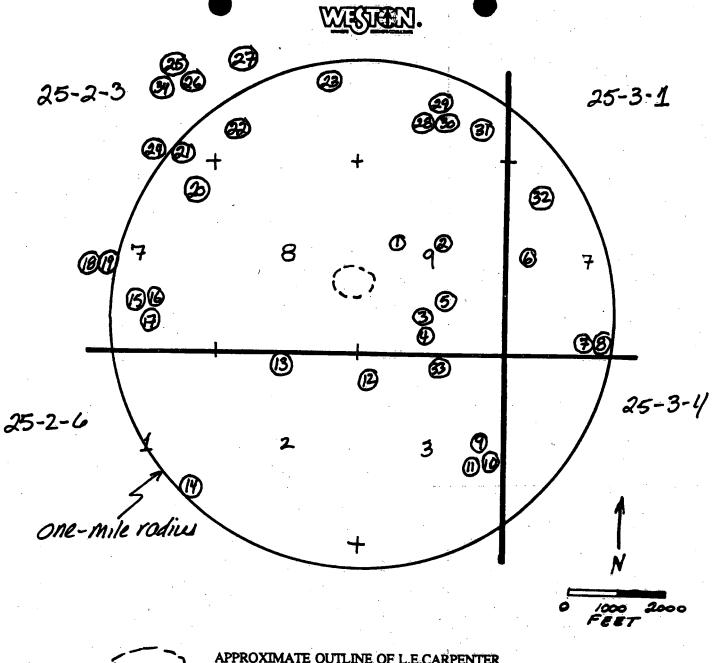
- Five of these well permit locations are probably downgradient of LEC (Wells 2, 3, 4, 5, and 6). Four are domestic well permits and one is an irrigation well permit.
- The remaining eight well permit locations are probably upgradient of LEC. Six are domestic well permits and two are irrigation well permits.
- Information from the Rockaway Township tax office indicates that two well permits, Wells 21 and 24, are for wells on currently undeveloped property. WESTON assumes they are not in use. Both these well permit location are probably upgradient of LEC.
- Currently available information from public sources was insufficient to determine the status of 12 well permits. (Wells 1, 12, 14, 19, 22, 25, 28, 29, 30, 32, 33, and 34).
 - Wells 32 and 33 are probably downgradient of LEC. These wells were installed in 1969 and 1960, respectively, and are identified as domestic wells on their permits. They are probably out of use due to their age and lack of current information.
 - The remaining ten wells are probably upgradient of LEC. All are identified as domestic wells but only two, Wells 19 and 25, were installed less than 20 years ago. In addition, the address and phone number could be verified only for Wells 30 and 32. Given the lack of current information and their relatively old age these wells are probably out of use.

METHODS

- 1) Using the NJDEP LORDS (Land Oriented Reference Data System) Coordinate System, the well permits were located on a street map of the area within approximately a one-mile radius of LEC.
- 2) The LORDS Coordinate location was then checked against the street address given as the well location on the well permit.
 - a) If the street passed through the LORDS unit given on the well permit, the street address was considered correct. (See Attachment 1 for explanation of LORDS).
 - b) If the street did not pass through the LORDS unit given on the well permit, the LORDS coordinate was considered incorrect and it was changed based on the street location. WESTON assumes that it is easier to make a mistake with the LORDS coordinate than with the location address.
- The permits were then sorted by municipality and the tax office was contacted to obtain lot and block for the addresses listed on the permits. This was done to verify the address and current owner. Well permits listed under "Insufficient Information to Verify Current Use" failed at this point because of a lack of correct (or any) address on the permit, no phone number listing, and no record of the resident on current tax records.



- 4) Phone listings were then checked to help confirm address.
- 5) All phone correspondence records were included with each well record located under each township category.
- A database was developed to help locate each well owner with missing information to rule out either non-active wells, wells under different ownership, wells that are abandoned, wells upgradient of LEC, or wells not within a one mile radius of site.
- 7) Called water department and health department of each township to determine if well is in use. All phone records are attached to each township group. In this step addresses and locations on permits were identified to determine if well owner is currently using municipal water supply.
- Using the latitude and longitude of the LORDS blocks from LORDS atlas sheet 25, the well locations were transferred to a map of the surficial geology of the Warton, N.J. area (Surfical Geologic Map of the Dover Quadrangle, Morris and Sussex Counties, New Jersey, NJGS Map 89-2).
- 9) The 550-foot bedrock topographic and 640-foot surface topographic contours pass through LEC and were outlined to help define areas upgradient and downgradient of LEC.
- As shown in Figure 2, most of the wells located within one mile of LEC are upgradient of both the 550-foot bedrock and surface 640-foot surface contours. These wells are listed as upgradient on Table 1. Those wells downgradient of the 640-foot surface topography contour were classified as downgradient as listed on Table 1.



APPROXIMATE OUTLINE OF L.E.CARPENTER

NJDEP WELL PERMIT LOCATION AND MAP KEY NUMBER (LOCATIONS ARE APPROXIMATE)

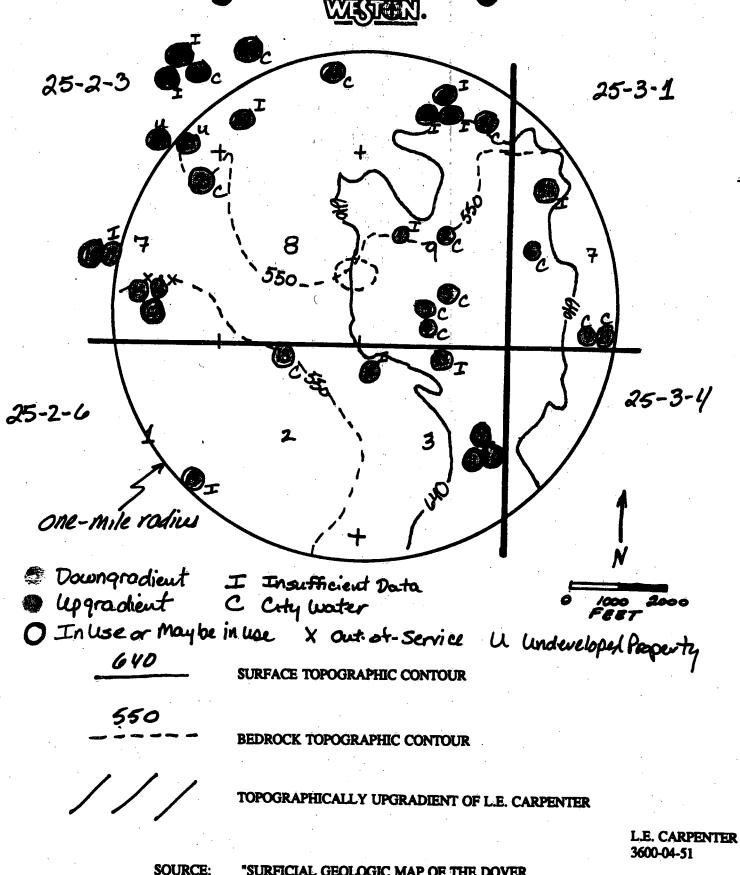
25-2-6 LORDS SHEET-BLOCK-RECTANGLE

LORDS SQUARE NUMBER

DIVIDER BETWEEN LORDS SQUARES

L.E. CARPENTER 3600-04-51

FIGURE 1: LOCATION OF WELL PERMITS WITHIN A ONE-MILE RADIUS OF L.E. CARPENTER



"SURFICIAL GEOLOGIC MAP OF THE DOVER
QUADRANGLE, MORRIS AND SUSSEX COUNTIES,

QUADRANGLE, MORRIS AND SUSSEX COUNTIES, NEW JERSEY." NIGS MAP 89-2, 1989

FIGURE 2: ESTIMATE OF UP-GRADIENT AND DOWN-GRADIENT AREAS AROUND L.E. CARPENTER BASED ON TOPOGRAPHY

MAP ID	OWNER	OWNER ADDRESS	WELL	USE	DATE CONSTRUCTED	STATUS/COMMENTS
WEI	LL IS DOWNGRADIENT	OF L.E. CARPENTER BASED ON	BEDROCK	AND	SURFACE	тородгарну.
Cui	rrent information	indicates that these wells a	re in u	se.		
9 10 11	Dover Twp. Exempt Borough of Wharton Dover Twp. Exempt	37 N. Sussex St., Dover, NJ 07801 10 Roberts St., Wharton, NJ 07885 37 N. Sussex St., Dover, NJ 07801	Dover Dover Dover	P P P	01-Apr-66 16-Apr-71 10-Sep-71	Well #1; In use, Princeton Ave. Well field, Dover. Well #3; In use, Princeton Ave. Well Field, Dover. Well #5; In use, Princeton Ave. Well Field, Dover
Cuz	rent information	indicates that these well ow	ners use	e ci	ty water	supply.
23456	Bird, John Casey, Julia Casey, Julia Townsquare Nursery Galantio, William	284 W. Dewey Ave. Wharton, NJ 07885 296 W. Dewey Ave. Wharton NJ 07885 296 W. Dewey Ave. Wharton, NJ 07885 420 Rt. 15, Dover, NJ 07801 2 Lewis St., Wharton, NJ 07885	Rockaway Rockaway Rockaway Rockaway Rockaway	D D I D	29-Nov-71 03-Jul-72 26-Sep-80 21-May-85 30-Apr-87	Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply.
Cuz	rrent information	insufficient to determine we	ll use s	stat	us.	
32 33	Lamont, Jack W. Shamrock Oil Co.	97 Cayaga Ave. Rockaway, NJ 07885 Rte #15, Wharton, NJ 07885	Mt. Hope NA	D	11 · Dec · 69 21 · Jun · 60	Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well.
WEI	LL IS UPGRADIENT O	F L.E. CARPENTER BASED ON BE	DROCK A	nd s	URFACE TO	POGRAPHY.
Cur	rrent information	indicates that these wells a	re in us	se.		
15 16 17 18	Borough of Wharton Borough of Wharton Csohla, John Stickle, John	10 Roberts St., Wharton, NJ 07885 10 Roberts St., Wharton, NJ 07885 Box 534, Union Tpk, Wharton, NJ 07885 Box 456, R.D.#3, Wharton, NJ 07885	Wharton Wharton Rockaway Rockaway	P	08-Sep-53 21-Dec-60 02-Jun-76 06-Nov-69	Well #1; TCE contaminated, Not in use. Well #2; TCE contaminated, Not in use. Rockaway Twp. Water Dept. reports well at address is in use. Rockaway Twp. Water Dept. reports well at address is in use.
Cur	rent information	indicates that these well ow	ners use	e ci	ty water	supply.
7830 10036 1	Townsquare Village Townsquare Village Katermann, William Dakos, Joseph Szpllosy, Ludwig Carper, Arthur Unick, Walter Rizzo, Philip N.	1325 Morris Ave, Union, NJ 07083 1325 Morris Ave, Union, NJ 07083 Mt. Fern, Dover, NJ 07801 325 Union Tpk., Wharton, NJ 07885 Richard Mine Rd. Wharton, NJ 07885 Box.262, R.D.#1, Wharton, NJ 07885 260 Union Tpk., Wharton, NJ 07885 446 Morris Ave. Springfield, NJ	Rockaway Rockaway Wharton Wharton Wharton Rockaway Wharton Rockaway		15 · Sep · 88 19 · Sep · 88 14 · Apr · 58 13 · Sep · 62 21 · Dec · 63 06 · Nov · 59 27 · Nov · 59 04 · Dec · 70	Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply.
Cur	rent information	indicates that these wells a	re not i	in u	se.	
21 24	Highland of Morris	160 Littleton Rd., Parsippany, NJ 160 Littleton Rd., Parsippany, NJ	Rocknwny Rockaway	D	12-Aug-87 11-Nov-86	Vacant lot, Health Dept. reports city water hook-up available. Vacant lot, Health Dept. reports city water hook-up available.
Cur	rent information	insufficient to determine we	ll use s	stat	us.	• • • • • • • • • • • • • • • • • • •
12 12 14 19 22 25 28 29 34	Ballard, John Mooney, Samuel Knutsen, Arthur Vitale Bros. Bldrs. Foxcraft Motors Regan, Jack & Barbara Samuels & Sons, Joseph Garie, Joseph Donnelly, William Popovitch, Andrew	Roxbury Township, NJ 07885 Roxbury Township, NJ 07885 16 Maple Terr, Wharton, NJ 07885 39 Normandy Pl., Irvington, NJ Rt. 15, Wharton, NJ 07885 60 Venetian Dr., Lake Hopatcong, NJ P.O. Box 623 Morristown, NJ Wharton, NJ 07885 89 W. Central St., Wharton, NJ 07885 Union Tpk., Warton, NJ 07885	NA NA NI NA Mine Hill Rockaway Rockaway Mt. Hope Rockaway	D D	27-Nov-60 22-Jun-57 17-Jul-61 11-Sep-72 09-Sep-66 13-Jan-87 25-Jul-61 01-Oct-59 12-Apr-61 04-Dec-64	Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well.
*	: Corrected Lords coordi	inate for accurate well location that is	incorrect	on w	ell record.	I : Irrigation Well.

[:] Domestic Well. : Public Supply Well.

ML: Telephone number not listed with local directory assistance.

SUMMARY OF WELL OWNER AND USAGE INFORMATION WITHIN ONE MILE RADIUS OF L.E. CARPENTER, CO., WHARTON, NEW JERSEY

DATE MAP ID OWNER LOCATION USE CONSTRUCTED WELL USE COMMENTS Current information indicates these wells are in use. Well #1: In use, Princeton Ave. Well Field, Dover.
Well #3: In use, Princeton Ave. Well Field, Dover.
Well #5: In use, Princeton Ave. Well Field, Dover
Well #1: TCE contaminated, Not in use.
Well #2: TCE contaminated, Not in use.
Rockaway Twp. Water Dept. reports well at address is in use.
Rockaway Twp. Water Dept. reports well at address is in use. Dover Twp. Exempt Borough of Wharton Dover Twp. Exempt Borough of Wharton Borough of Wharton Csohla, John Stickle, John 01-Apr-66 16-Apr-71 10-Sep-71 Dover Dover Dover 08-Sep-53 21-Dec-60 02-Jun-76 Wharton Wharton Rockaway D 06-Nov-69 18 Rockaway these well owners use city water supply. Current information indicates that Bird, John
Casey, Julia
Casey, Julia
Townsquare Nursery
Galantio, William
Townsquare Village
Townsquare Village
Katermann, William
Dakos, Joseph
Szpllosy, Ludwig
Carper, Arthur
Unick, Walter Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. 29-Nov-71 03-Jul-72 Rockaway Rockaway 03-Jul-72 26-Sep-80 21-May-85 30-Apr-87 15-Sep-88 14-Apr-58 13-Sep-62 21-Dec-63 06-Nov-59 27-Nov-59 04-Dec-70 Rockaway Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Water Dept. billing records indicate address is served by city water supply. Rockaway Rockaway Rockaway Rockaway Wharton Wharton 20 23 26 27 Wharton Rockaway Wharton 31 Rizzo, Philip N. Rockaway these wells are not in use. Current information indicates that Vacant lot, Health Dept. reports city water hook-up available. Vacant lot, Health Dept. reports city water hook-up available. 12-Aug-87 11-Nov-86 Highland of Morris Highland of Morris Rockaway Current information insufficient to determine well use status. Ballard, John Mooney, Samuel Knutsen, Arthur Vitale Bros. Bldrs. 27-Nov-60 22-Jun-57 17-Jul-61 11-Sep-72 Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. NA Mine Hill Rockaway Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Insufficient information from permit to locate owner and well. Foxcraft Motors 09-Sep-66 13-Jan-87 25-Jul-61 NA-Regan, Jack & Barbara Samuels & Sons, Joseph Mine Hill Rockaway Garie, Joseph Donnelly, William Lamont, Jack W. Shamrock Oil Co. 01-Oct-59 Rockaway Mt. Hope Nt. Hope NA 12-Apr-61 11-Dec-69 21-Jun-60 04-Dec-64 Popovitch, Andrew Rockaway

DATE: 06-Mar-91 WO#: 3600-04-51

NA - Not Applicable, wells are not plotted on map due to erroneous lords coordinates given on well permit.

D : Domestic Well. P : Public Supply Well. I : Irrigation Well.

ATE: 06-Mar-91 10#: 3600-04-51

TABLE 2 (CONT.)
SUMMARY OF WELL LOCATIONS WITHIN ONE MILE RADIUS OF
L.E. CARPENTER, CO., WHARTON, NEW JERSEY

(AP	OWNER	OMNER Address	WELL LOCATION	LOT	BLOCK	PERMIT #	LORDS COORDS.	USE	DATE CONSTRUCTED	PHONE LISTING
— Curi	cent information	indicates that these wells are	in use.							
9 10 15 6 7 18	Dover Twp. Exempt Borough of Wharton Dover Twp. Exempt Borough of Wharton Borough of Wharton Csohla, John Stickle, John	37 N. Sussex St., Dover, NJ 07801 10 Roberts St., Wharton, NJ 07885 37 N. Sussex St., Dover, NJ 07801 10 Roberts St., Wharton, NJ 07885 10 Roberts St., Wharton, NJ 07885 Box 534, Union Tpk, Wharton, NJ 07885 Box 456, R.D.#3, Wharton, NJ 07885	Dover Dover Dover Wharton Wharton Rockaway Rockaway	2 2 NA NA NA NA	6-01 6-01 6-01 NA NA NA	25 - 16024 25 - 15799 25 - 16024 25 - 2178 25 - 8675 25 - 18454 25 - 1540	25 · 2 · 636 25 · 2 · 636 25 · 2 · 636 25 · 2 · 378 25 · 2 · 378 25 · 2 · 378 25 · 2 · 374	P P P P D D	01-Apr-66 16-Apr-71 10-Sep-71 08-Sep-53 21-Dec-60 02-Jun-76 06-Nov-69	(201)366-2200 (201)366-3593 (201)366-2200 (201)366-3593 (201)366-3593 NL NL
Curi	cent information	indicates that these well owner	rs use c	ity w	ater s	upply.				
2345678303671	Bird, John Casey, Julia Casey, Julia Townsquare Nursery Galantio, William Townsquare Village Townsquare Village Katermann, William Dakos, Joseph Szpllosy, Ludwig Carper, Arthur Unick, Walter Rizzo, Philip N.	284 W. Dewey Ave. Wharton, NJ 07885 296 W. Dewey Ave. Wharton NJ 07885 296 W. Dewey Ave. Wharton NJ 07885 420 Rt. 15, Dover, NJ 07801 2 Lewis St., Wharton, NJ 07885 1325 Morris Ave, Union, NJ 07083 1325 Morris Ave, Union, NJ 07083 Mt. Fern, Dover, NJ 07801 325 Union Tpk., Wharton, NJ 07885 Richard Mine Rd. Wharton, NJ 07885 Box 262, R.D.#1, Wharton, NJ 07885 260 Union Tpk., Wharton, NJ 07885 446 Morris Ave. Springfield, NJ	Rockaway Rockaway Rockaway Rockaway Rockaway Rockaway Wharton Wharton Wharton Wharton Rockaway Rockaway	26655 1-01 1-01 NA NA NA NA	11506 11505 11505 10901 11506 11004 11004 NA NA NA NA	25-16185 25-16401 25-24693 25-24993 25-32121 25-32122 25-7581 25-11728 25-8986 25-8986 25-15748	25 - 2 - 395 * 25 - 2 - 398 * 25 - 2 - 398 * 25 - 3 - 178 25 - 3 - 178 25 - 2 - 622 25 - 2 - 373 25 - 2 - 354 25 - 2 - 369		29 · Nov · 71 03 · Jul · 72 26 · Sep · 80 21 · May · 85 30 · Apr · 87 15 · Sep · 88 19 · Sep · 88 14 · Apr · 58 13 · Sep · 62 21 · Dec · 63 06 · Nov · 59 04 · Dec · 70	NL (201)366-2690 (201)366-2690 (201)366-8676 (201)366-5026 NL (201)366-1781 (201)366-8196 NL (201)366-2062 NL
Curi	cent information	indicates that these wells are	not in	use.					•	
21 24	Highland of Morris Highland of Morris	160 Littleton Rd., Parsippany, NJ 160 Littleton Rd., Parsippany, NJ	Rockaway Rockaway	47 47	11501 11501	25 - 29036 25 - 29036	25-2-349 25-2-348	D.	12-Aug-87 11-Nov-86	NL NL
Cur	cent information	insufficient to determine well	use sta	tus.					·	
124925890234	Ballard, John Mooney, Samuel Knutsen, Arthur Vitale Bros. Bldrs. Foxcraft Motors Regan, Jack & Barbara Samuels & Sons, Joseph Garie, Joseph Donnelly, William Lamont, Jack W. Shamrock Oil Co. Popovitch, Andrew	Roxbury Township, NJ 07885 Roxbury Township, NJ 07885 16 Maple Terr., Wharton, NJ 07885 39 Normandy Pl., Irvington, NJ Rt. 15, Wharton, NJ 07885 60 Venetian Dr., Lake Hopatcong, NJ P.O. Box 623 Morristown, NJ Wharton, NJ 07885 89 W. Central St., Wharton, NJ 07885 97 Cayaga Ave. Rockaway, NJ 07885 Rte #15, Wharton, NJ 07885 Union Tpk., Warton, NJ 07885	NA NA NINE HILL ROCKAWAY MINE HILL ROCKAWAY ROCKAWAY NT. HOPE NA ROCKAWAY	NA NA NA NA NA NA NA NA NA NA	NA NA NA NA 1807 NA NA NA NA	25-9608 25-6669 25-10074 25-16494 25-13996 25-28911 25-3681 25-9905 25-15430 25-9366 25-12550	25-2-394 25-2-376 25-2-376 25-2-3776 25-2-3577 25-2-368 25-2-368 25-2-368 25-2-368 25-2-368 25-2-368 25-2-368 25-2-368	00000000000	27-Nov-60 22-Jun-57 17-Jul-61 11-Sep-72 09-Sep-66 13-Jan-87 25-Jul-61 01-Oct-59 12-Apr-61 11-Dec-69 21-Jun-60 04-Dec-64	NL NL NL NL NL NL NL (201)770-2583 (201)366-8364 NL

[:] Information not available. : Reflects Lords coordinate corrected for accurate well location that is incorrect on well record. : Domestic Well.

P : Public Supply Well.
I : Irrigation Well.
NL : Telephone number not listed with local directory assistance.

ATTACHMENT 1

Analytical Reports for Wells 9, 10 and 11

Division of Water Resources — Bureau of Safe Drinking Water CN 029. Trenton, N.J. 08625

INORGANIC CHEMICAL ANALYSIS INPUT FORM

Name Loharton Doter Dest Address 10 AnherT STREET. City Wharton State New Jersey Zip 07885	Pilan Labo Labo	t Name_Wh, pratory ID# pratory Name_	3 9 0 0 arton wate 1 4 1 1 Icm Labor	RDERTO 1	
Location at which sample collected: Address #3 Eileen CT			11/16/88	•	
City WhanTon	Collected by Clyde A Canticld TR				
County_MORRIS	Anal	yzed by R 1+	Dit, T. santa	AC B. Beibei K-coun	ıı e
Contaminant ID and Name	Analys Sign (<)	is Results mg/l (PPM)	Analysis Method #	Analysis Date	
1005 - Arsenic	4	0.003	206.20B	13/7/88	
1010 - Barium	4	0.040	200,780		
1015 - Cadmium	2	0.001	A93.616	12/5/88	
1020 - Chromium	.4		200.7 6AM	11/23/88	
1025 - Fluoride		0.2	340.18	11/99/88	
1030 - Lead	۷	0.004	239.248	11/30/88	
1035 - Mercury	2	0.001	245.18PA	19/17/81	
1040 - Nitrate (as N)		ტ. ვ	353.2 ERA	11/19/88	
1045 - Selenium	4	0.003	270.2874	11/30/88	
1050 - Silver	4	0.005	200.78AA	11/93/88	
1052 - Sodium	20.0	30.5	200.78	11/23/89	

Form prepared by: _	Owner/Operator	or dLaboratory	·
Clyde A CANFTEL Print Name	OJR Chyle Signatur	A Cashele Ju e of Representative	<u>12/28/98</u> Date
(201) 366-3593 Phone #	·		\

Note: See reverse side for analysis methods and sample type key.

New Jersey Department of Environmental Protection Division of Water Resources — Bureau of Safe Drinking Water CN 029, Trenton, N.J. 08625

ORGANIC CHEMICAL ANALYSIS INPUT FORM

Labor	Name Wata	e <i> #3</i> 4 1 4	_ #
	atory ID#	14116	•
Labor	ratory Name_	ICM LOBORO	itorics
Colle	ction Date _	1 , 3 , 90	
		7	
Colle	cted by C	yde A Can	field JR
Analy	yzed by Si	Bavia Robe	rts.
Sign	µg/l	Analysis Method #	Analysis Date
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	0.05	5m 509 A	1/12/90
<	0.51	5m 509 A	1/12/90
۲ .	2.0	5m 509A	V12/90
4	0.05	5m 509B	1/15/90
<	0.01	5m 509 B	1/15/90
	•	-17{	
	Collete Samp Collete Analysisign (<)	Collection Date Sample Type:/ Collected byC/ Analyzed by _S/ Analysis Results SignHg/i (PPB) <o_5 <o_5="" <o_5<="" th=""><th>Collection Date Sample Type: Collected by Chide A Can Analyzed by Si Bovid Robe Analyzed by Si Bovid Robe Analysis Results Analysis Method # (I) (PPB) Colo Sin 509 A Colo Sin 509 A Colo Sin 509 A Colo Sin 509 A</th></o_5>	Collection Date Sample Type: Collected by Chide A Can Analyzed by Si Bovid Robe Analyzed by Si Bovid Robe Analysis Results Analysis Method # (I) (PPB) Colo Sin 509 A Colo Sin 509 A Colo Sin 509 A Colo Sin 509 A

C/y/e Print Nam	A Con	se/dJA
	6-359	

SAMPLE TYPE

onature

C - Check Sample

3.20

P - Plant Tap (Treated Water) Sample

D - Regular Distribution System Sample

R - Raw Water (Untreated) Sample

of Representative

M - Maximum Residence Time for THMs

S - Special Sample

CES 26 890

EPA ANALYSIS METHODS FOR ORGANICS

Indicate the Analysis Method # for the appropriate approved method as referenced in the Federal Register, 141.24 (e) & (f)

Equivalent as determined by USEPA and certified by the NJDEP Office of Quality Assurance.

New Jersey Department of Environmental Protect Division of Water Resources - Bureau of Safe Drinking Water CN 029, Tranton, N.J. 08625

Address 180 w. Central Ave. City wharton State NJ. Zip 07885 Location at which sample collected: Address well *2 City wharton County morris County	Plant Labora Labora Collect Samp	atory ID# atory Name_ atory Name_ ation Date le Type: cted by	1 / 3 / 90	atories afield IR
Contaminant ID and Name	Analys Sign (<)	is Results µg/i (PPB)	Analysis Method #	Analysis Date
2005 - Endrin	_ <	0.10	sm 509 A	1 1
2010 - Lindane		0.05	907 509 A	V2/90
2015 - Methoxychlor		0.51	\$m 509A	1/12/90
2020 - Toxaphene	<	3.0	\$m 509 A	1/12190
2105 - 2,4-D	15	0.05	SM 509B	1/15/90
2110 - 2,4,5-TP Silvex	<	0.01	15M 509B	1/15)90
		•		

Form prepared by:Owner, Clyde A Can field JR Frist Name	Operator or Laboratory Classe & Lemfuel & Representative	21/190 Date
(201) 366-3593 Phone #		·:

SAMPLE TYPE

C - Check Sample

D - Regular Distribution System Sample

M - Maximum Residence Time for THMs

P - Plant Tap (Treated Water) Sample

R - Raw Water (Untreated) Sample

S - Special Sample

EPR ANALYSIS METHODS FOR ORGANICS

Indicate the Analysis Method ! for the appropriate approved method as referenced in the Federal Register, 141.24 (e) & (f)

Equivalent as determined by USEPA and certified by the NJDEP Office of Quality Assurance.

New Jersey Department of Environmental Protection Division of Water Resources — Bureau of Safe Drinking Water CN 029, Tranton, N.J. 08625

ORGANIC CHEMICAL ANALYSIS INPUT FORM.

Water Teat.	PWS ID# 1 4 3 9 0 0 1 OR						
vame wharton water Dept.	Plant Name						
Address 180 W. Central Ave.							
city wharton	Laboratory ID# 1 4 1 1 6 Laboratory Name ICM Laboratories						
State NJ Zip 07885		'	•	atories			
Location at which sample collected:	Collection Date 1/5/90						
Address_ well # 1	Samp	ole Type:	<u> </u>				
	Collected by Clyde A Canfield IR						
city <u>Wharton</u>	Analyzed by S. David Roberts						
county morris County							
	Analys	is Results	Analysis	Analysis			
Contaminant ID and Name	Sign (<)	Дg/l (PPB)	Method #	Date			
2005 - Endrin	<	0.10	\$m 509 A	1/12/90			
2010 - Lindane	イ	0.05	Sm 509 A	1/12/90			
2015 - Methoxychlor	4	0.51	Sm 509 A	1/12/90			
2020 - Toxaphene	4	9.0	509A	112190			
2105 - 2,4-D	۷.	0.05	SM 509 B	1/15/90			
2110 - 2,4,5-TP Silvex	4	001	Sm 509 B	1/15/90			
		•	• •	•			
	•	·					
	• •	•	•				
		•	_				

Form prepared by:Owner/ Clude A Canfield JR Print Name	Operator or Value Laboratory Signature of Representative	21_190 Date
(<u>201</u>) <u>366 - 3593</u> Phone #		

SAMPLE TYPE

C - Check Sample

D - Regular Distribution System Sample

M - Maximum Residence Time for THMs

P - Plant Tap (Treated Water) Sample

R - Raw Water (Untreated) Sample

S - Special Sample

EER 2 6 1990 EPA APALYSIS METHODS FOR ORGANICS

Indicate the Analysis Method # for the appropriate approved method as referenced in the Federal Register, 141.24 (e) & (f)

Equivalent as determined by USEPA and certified by the NJDEP Office of Quality Assurance.

SECONDARY SUBSTANCES ANALYSIS INPUT FORM

vame wharton water Dept. Address 180 w. central Ave.	PWS 10+ 1 4 3 9 0 0 1 SC Plant Name Well #3 # — — Laboratory 10# 1 4 1 1 6
Address	Laboratory ID#
city wharton zip 07885	Laboratory Name ICH Caboratones
StateNA	Collection Date 1/3/90
Location at which sample collected:	Sample Type:
Address well \$3	Collected by Clyde A Cantield Il
city <u>wharton</u>	Analyzed by m. Cordoya.
County morris County	Analysis Results Analysis Analysis

County_17751113	Analysi		Analysis	Analysis
Contaminant ID and Name	Sign . (-)</td <td>mg/l *</td> <td>Method #</td> <td>Date</td>	mg/l *	Method #	Date
	4	10	sm 204A	113190
1905 - Color		0.020	EPA 2007	1/5/90
1095 - Zinc		1	3m 207	1/3/90
1920 - Odor	≺.	0:1	SM 5128	1/4/90
2905 - ABS/L.A.S.		560	EPA 325.2	1/5/90
1017 - Chloride	4	0.025	EPA 20017	1/5/90.
_1022 - Copper (as CaCO ₃)	•	199	5PA . 20017	15190
1916 - Hardness (as cutty)	<	0,050	EPA 200.7	115190
1028 - Iron		0.015	EPA 200.7	11/5A0
1032 - Manganese	15_	15	BA 375.4	115/90
1055 - Sulfate 1 Dissolved Solids		290	Sm 2098	1/4/90:
1930 - Total Disser-		0:0	sm 203	1/3/90
- Corrosivity		7.58	3m.423	1/3/90
DH		170	Sm 403	1/3/90
altalinity		44	Sm -311C	1/3/90
Calcium	t color		or(TON), corr	

^{*}Determinations in ppm (mg/l) except color (CU), odor(TON), corrosivity, pH, and temperature(*F)

FEB 26 1990 Form prepared by:	aboratory esentative	2// Date	190
(201) 366-3593 Phone Number			

SECONDARY SUBSTANCES ANALYSIS INPUT FORM

Name Wharton water Dept. Address 180 W. Central Ave. City Wharton State NJ Zip 07885 Location at which sample collected: Address Excl #2 City Wharton	PWS:D= 1 4 3 9 0 0 1 SC Plant Name Well # 2 # Laboratory ID# 1 4 1 1 6 Laboratory Name ICM (250rationes) Collection Date 1 3 190 Sample Type: R Collected by Clyde A Cantield In Analyzed by m. Cordova
County morris County	L Anglysis Results

Analysis Date 1/3/90
1/3190
11/5/90
1/3/90
1/3/90
11/20
1/5/90
1/5/90
1-10
1212
1 115190
114190:
1/3/90
1/2/0-
1 1/2/30
1/3/90
1/3/90

*Determinations in ppm (mg/l) except color (CU), odor(TON), corrosivity, pH, and temperature(*F)

FER	2.6	1990
-----	-----	------

Form prepared by:(wnec/	Operator or Laboratory	2.0.0
Clyde A Canticid VR Print Name	Signature of Pepresentative	<u> </u>

(<u>201</u>) <u>366-3593</u> Phone Number

NOTE: See reverse side for sample type key.

SECONDARY SUBSTANCES ANALYSIS INPUT FORM

			3900	, sc
Name wharton water Dept -	C 5 6 '			
Address 180 W. Central Ave		vame We		
Address 180 Common Address			4111	-
city longron Zip 07885	Labora	story Name	ICM (250m	atones_
State	Collec	ion Date _	1 / 3 /90	
Location at which sample collected:	Sampl	e Type:	2*	· · · · · · · · · · · · · · · · · · ·
Address (Dell' #1	Collec	ted by C	lyde A Car	ofield TR
cin (D) Carton			Cordona	
County Morris County			`	
	Analysi Slan	s Results mg/l *	Analysis	Analysis Date
Contaminant ID and Name	(-)</td <td>(PPMI</td> <td>Method #</td> <td></td>	(PPMI	Method #	
	4	10	Smach	113190
1905 - Color		0.006	F:006.499	115190
1095 - Zinc	1		Sm 207	113190
1920 - Odor	1	0.1	Sm 513B	114190
2905 - ABS/L.A.S.	<u> </u>	25	EDA: 335.2	115190:
1017 - Chloride	1	0.005		115190.
1022 - Copper (32 C3CO2)	-	124	EPA300.7	115190
1916 - Hardness (as CaCO ₃)	1		7,006 893	11890
1028 - Iron	1-4	1 1	T,006,993	115190
1032 - Manganese	1 2	0.015	1278 375.Y	15190
sulfate		113		114/90:
matril Dissolved Sollas		רבו	15m 209B	1
1,7,50	_	0.2	sm 203	13190
- Corrosivity		7.78	Sm 423	113/90
HC	- 	1113	1	1
araliniti		113	Sm 403	113190
allaming		36	Sm3110	13190
Calcium ins in pom (mg/1) except	t color	(CU), od	or(TON), cor	rosivity,

*Determinations in ppm (mg/l) except color (CU), odor(TON), corrosivity, pH, and temperature(°F)

Porm prepared by:(wner/	Operator or Laboratory	21.1190
Clyde A Canfield IR	Signature of Representative	Date

(201) 366-3593 Phone Number res 26 1990

)WR-085 (12/87)

New Jersey Department of Environmental Protection Division of Water Resources — Bureau of Safe Drinking Water CN 029, Trenton, N.J. 08625

PERIODIC HAZARDOUS CONTAMINANT (A-280) ANALYSIS INPUT FORM

Name what on water Dept. Address 150 W. Central Ave City what on State NJ Zip 07885 Location at which sample collected: Address well # 1 City what on County morris County	PWS Plant Labor Labor Collect Samp	Name	3 9 0 0 e//#/ 1 4 1 1 6 fcm Labora 1 , 3 , 90 /yde 4 C	_ # Q <u> </u> tories - anfieldJ/	{ }
Contaminant ID and Name	Analys Sign	is Results ug/l (PPB)	Analysis Method #	Analysis Date	
2984 — Trichloroethylene	18)	3	502.1	1/6/90	
2987 — Tetrachloroethylene	4	0.5	502.1	1/16/90	
2000 Comen Tetrachloride	<	0.5	50a.1	1/16/90	

	Analysis Results		Analysis	Analysis	
Contaminant ID and Name	Sign (<)	ug/l (PPB)	Method #	Date	
2984 — Trichloroethylene		3	502.1	1/6/90	
	4	0.5	502.1	1/16/90	
2987 — Tetrachloroethylene	<	.O.5	50a.1	1/16/90	
2982 — Carbon Tetrachloride		0.5	502.1	1/16/90	
2981 — 1,1,1 - Trichloroethane	alii a a aa		502.1	V16190	
2980 — 1,2 - Dichloroethane		0.5		1/16/90	
2976 — Vinyl Chloride		0.5	502.1		
2964 — Methylene Chloride	_ < -	0.5	502.1	V16/90	
2990 — Benzene		0.5	503.1	V16/90	
2989 — Chlorobenzene	<	0.5	502.1	V16190	
2401 — Total Dichlorobenzenes*	<	0.5	503.1	1/17/90	
2378 — 1,2,4 - Trichlorobenzene	<	0.5	503.1	V17190.	
2977 — 1,1 - Dichloroethylene	<	015	502.1	1/16/90	
2380 — cis - 1,2 - Dichloroethylene	<	0.5	50a.1	1/16/90	
2979 — trans - 1,2 - Dichloroethylene	<	0.5	503.1	V16190	
	<	0.5	503.1	1/17/90	
1 Otal and of	<	0.5	505	1/15190	
	<	0.5	505	V15/90	
2959 — Chlordane		<u> </u>			

^{*} See note on the back of this form if detectable levels are found.

Form prepared by: ____Owner/Operator or ______Laboratory

I certify that this water sample was collected and analyzed in accordance with approved procedures established by the New Jersey Department of Environmental Protection from the location described above.

NOTE: See reverse side for analysis method numbers and sample type key.

GWR-085 (12/87) DWR-BSDW-02.

New Jersey Department of Environmental Protection Division of Water Resources — Bureau of Safe Drinking Water CN 029, Trenton, N.J. 08625

PERIODIC HAZARDOUS CONTAMINANT (A-280) ANALYSIS INPUT FORM

Name wharton water Dept !!	•	-	3900	/ HZ # O _L
Address 180 W. Central Ave	•	Name/		_ *
City Whatton				2
State 1/15 Zip 07885	Labo	ratory Name	Icm Labore	ttories
Location at which sample collected:		ction Date _	113190	•
Address well * 2		ole Type:/\		0. (1-4
City whatton	Colle	ected by <u>C</u>	lyde A Ca	ntield)R
County morris County	Anal	yzed by <u>.T.</u> Kı	isterer & S.	D. Roberts
	Analys	is Results	Analysis	Analysis
Contaminant ID and Name	Sign (<)	ug/l (PPB)	Method #	Date
2984 — Trichloroethylene		2	50a.1	1/16/90
2987 — Tetrachloroethylene	<	0.5	502.1	1/16/90
2982 — Carbon Tetrachloride	<	0.5	503.1	1/16/90
2981 — 1,1,1 - Trichloroethane	<	0.5	502.1	V16/90
2980 — 1,2 - Dichloroethane	<	0.5	503.1	V16190
2976 — Vinyl Chloride	<	0.5	502.1	1/16/90
2964 — Methylene Chloride	ζ,	0.5	502.1	V16190
2990 — Benzene	<	0.5	502.1	1/16/90
2989 — Chlorobenzene	<	0.5	5021	116/90
2401 — Total Dichlorobenzenes*	<	0.5	503.1	1/17/90
2378 — 1,2,4 - Trichlorobenzene	<	0.5	503.1	1/17/90
2977 — 1,1 - Dichloroethylene	1	0,5	503./	1/16/90
2380 — cis - 1,2 - Dichloroethylene	<	0.5	507.1	1/16/90
2979 — trans - 1,2 - Dichloroethylene	<	05	502,1	V16/80
2955 — Total Xylenes*	<	0.5	503.1	1/17/90
2383 — Total Polychlorinated Biphenyls*	<	0.5	505	1/15/90
2959 — Chiordane		0,5	505	1/15/90

Form prepared by:	Owner/Operator	or	Laboratory
Form prepared by.	Owner/Operator	•	

I certify that this water sample was collected and analyzed in accordance with approved procedures established by the New Jersey Department of Environmental Protection from the location described above.

Print Name

Clyde A Can Lield TR Signature

Signature

2 1 / 190 Date

NOTE: See reverse side for analysis method numbers and sample type key.

See note on the back of this form if detectable levels are found.

วพิR-085 (12/87) วพิR-BSDพุ-02.

New Jersey Department of Environmental Protection Division of Water Resources — Bureau of Safe Drinking Water CN 029, Trenton, N.J. 08625

PERIODIC HAZARDOUS CONTAMINANT (4-280) ANALYSIS INPUT FORM

Name whatton water Dept. Address 180 W. Central Ave. City whatton State NJ Zip 07885 Location at which sample collected: Address well # 3 City whatton	Plant Labor Labo Colle Samp	Name <u>We</u> ratory ID#	3 9 0 0 11 # 3 1 4 1 1 CM Labora 1 13 190 P yde A C sterer & S. [# 02 boiles an file /d Th	7
County morris County		is Results			
Contaminant ID and Name	Sign (<)	ug/l (PPB)	Analysis Method #	Analysis Date	
2004	~	0.5	502.1	1/17/90	1

	Analys	s Results	Analysis	Analysis
Contaminant ID and Name	Sign (<)	ug/l (PPB)	Method #	Date
2984 — Trichloroethylene	<	<i>0</i> .5	502.1	1/17/90
2987 — Tetrachloroethylene	<	0.5	502.1	1/17/90
2982 — Carbon Tetrachloride	<	0.5	502.1	1/17/90
2981 — 1,1,1 - Trichloroethane	. 4	0.5	503.1	V17/90
2980 — 1,2 - Dichloroethane	4	0.5	502.(V17/90
2976 — Vinyl Chloride	<	0.5	502.1	V17/90
2964 — Methylene Chloride	۷,	0.5	5021	1/17/90
2990 — Benzene	<	0.5	502.1	1/17/90
2989 — Chlorobenzene	<	0.5	502.1	V17/90
2401 — Total Dichlorobenzenes*	<	0.5	503.1	1/18/90
2378 — 1,2,4 - Trichlorobenzene	4,	05	2031	1/18/90
2977 — 1,1 - Dichloroethylene		0.5	502.1	1/17/90
2380 — cis - 1,2 - Dichloroethylene	<	0,5	502.1	V17/90
2979 — trans - 1,2 - Dichloroethylene	×	.05	509.1	1/17/90
2955 — Total Xylenes*	<	0.5	503.1	1/18/90
2383 — Total Polychlorinated Biphenyls*	۷.	0.5	505	1/15/90
2959 — Chlordane	<	0.5	505	1/15/90

2959 — Chlordane			0.5	1 505	1/15/40
* See note on the back of this t			•		. '
• • •	er/Operator or 👱				
I certify that this water sample by the New Jersey Department	ent of Environmental	Protection from	om the locario	on described a	rocedures established Love.
Clyde A Cant	Geld IR S	Mele A	Confuld	h	21 <u>190</u> Date

NOTE: See reverse side for analysis method numbers and sample type key.

INORGANIC CHEMICAL ANALYSE: YURM

dame_Luharton_Loater Tepi ddress_150_Lu_Central_Ave dity_Luharton diate	Plant Labora Labora Collect Samp	Name	9 0 0 e//#/ U I I I I COM LOSDON I ,3 90 Vde A Can	# D L atories Field JR
Contaminant ID and Name	· Analysi Sign (<)	s Results mg/l (PPM)	Analysis Method #	Analysis Date
1005 - Arsenic	2	0.004	206287B	17490
1010 - Barium		0,010		115190
1015 - Cadmium	4	0.005	300.7 67A	1/5/90
1020 - Chromium		0.010	30075A	1/5/90
1025 - Fluoride		0.1	340.28PA	1/4/90
	1	0.004	239.2874	1990
1030 - Lead			245-18A	118 190
1035 - Mercury		 		1 1 -

Form brehamed 21.	Operator or Laboratory Chale A Anglice Li Signature of Representative	21/190
Clude A Canfield JA Print Name	Signature of Representative	Date

(<u>2c1</u>) <u>366-35-93</u> Phone #

1040 - Nitrate (as N)

1045 - Selenium 1050 - Silver 1052 - Sodium

Note: See reverse side for analysis methods and sample type key.

YURM INORGANIC CHEMICAL ANALYS

Name Wharton Water Déptis	ก็ (PWS	ID# º/ • 46°	3900	/ IN
Name What is contain the	Plant	Name W	11#2	# # # #
Address 180 W CENTRAL BUE			<u> </u>	
city what too	الملاء	alory ID#	ICW rapor	matricen.
StateNTZip_07885		•		ر کری در کری
Location at which sample collected:	Colle	ction Date	113190	
Address 1001 #2	Samp	ole Type:/	<u> </u>	
city <u>wharton</u>	Colle	cted by <u></u>	lyde A Ca	nfield SR
County Morris County			"Cordona	
	· Analys	is Results	Analysis	Analysis
Contaminant ID and Name	Sign (<)	mg/l (PPM)	Method #	Date
1005 - Arsenic	<	0,004	206. 2 EPA	1/4/90
1010 - Barium	1	0.010	2000 FPA	1/5/90
1015 - Cadmium	1	0,005	300.78 88	1/5/90
1020 - Chromium	<	0,010	300789	115/90
1025 - Fluoride		0.1	340. 2-EPA	1/4190
1030 - Lead	4	0.004	239.2870	1/9/90
1035 - Mercury	4	0.0005	245.18PA	1/8/90
1040 - Nitrate (as N)		0.9	353.2 EPA	1/5/90
1045 - Selenium	<	0.004	20,2800	1/5/90
1050 - Silver	4	0.010	200.788B	1/5/90
1052 - Sodium		30,1	273.18PA	1/5/90
			•	

rotm propulation -1	Owner/Operator or Laboratory	211190
Print Name	IR Signature of Representative	Date
1		

(<u>201</u>) <u>366</u> Phone #

Note: See reverse side for analysis methods and sample type key.

Name whaton water Dept: " ""	` °°PW\$	1D#	3700	/ IINI
Address 180 W. Central Ave	Plant	Name	e//#3	# 02
city whatten			<u> </u>	
State <u>N.J</u> Zip <u>07885</u>	Laiv	ratory Name_	Icm Labor	<u>atories</u>
Location at which sample collected:			1 13 190	
Address Well #3	Sam	ple Type:/	<u>?</u>	
city whatton	Colle	ected by \mathcal{L}	lyde A Ca	nfield JR
county morris county	Anal	yzed by <u>m</u>	Cordova	
	· Analys	is Results	Analysis	Analysis
Contaminant ID and Name	Sign (<)	mg/l (PPM)	Method #	Date
1005 - Arsenic	4	0.004	206.2 EPA	14/90
1010 - Barium		0.021	2007 EPA	V5190
1015 - Cadmium	<	0005	200,78PA	1/5/90
1020 - Chromium	<	0.010	200.78PA	1/5/90
1025 - Fluoride		Oct	340.28PA	V4/90
1030 - Lead	4	0004	339.28PA	1/9/90
1035 - Mercury	<	0.005	245.18 00	1/8/90
1040 - Nitrate (as N)		0.6	353.288	1/5/90
1045 - Selenium	4	0,004	20.288	1/5/90
1050 - Silver	4	0.010	200,7880	V 5190
1052 - Sodium		32.5	573. 188A	1/5/90
\$				

	Operator or Vlaboratory	
Clyde A Cantield JR Print Name	Signature of Representative	
(<u>20/</u>) <u>366 - 3593</u> Phone #		

See reverse side for analysis retnods and sample type key. Note:

140 30 Res

ATTACHMENT 2

LORDS Information

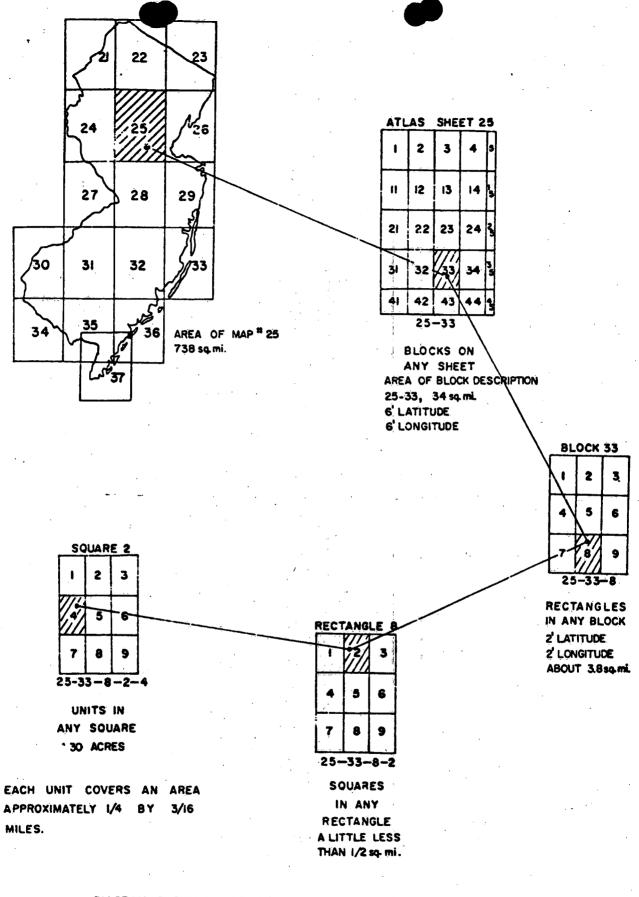


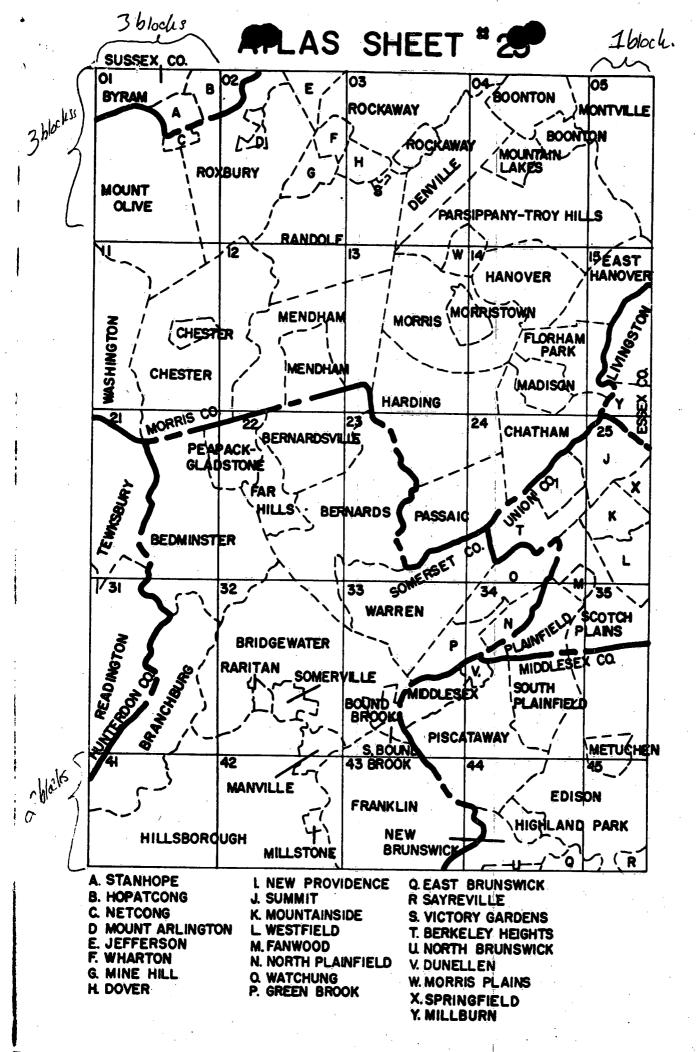
DIAGRAM SHOWING USE OF NEW JERSEY RECTANGULAR COORDINATE SYSTEM. TO LOCATE A FACILITY AT

25-33-8-2-4 - (1) (*

SHEFET BLOCK RECTALGE

Fig. 2

6



LAND ORIENTED REFERENCE DATA SYSTEM

BULLETIN 74

NEW JERSEY GEOLOGICAL SURVEY

BUREAU OF GEOLOGY AND TOPOGRAPHY

DIVISION OF WATER RESOURCES

DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUGUST 1974